



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/624,664

07/22/2003

Yehuda Navch

IL920030018US1

7003

7590

05/03/2006

Stephen C. Kaufman  
Intellectual Property Law Dept.  
IBM Corporation  
P.O. Box 218  
Yorktown Heights, NY 10598

EXAMINER
----------

HOLMES, MICHAEL B

ART UNIT	PAPER NUMBER
----------	--------------

2121

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/624,664	<b>Applicant(s)</b> NAVEH, YEHUDA	
	<b>Examiner</b> Michael B. Holmes	<b>Art Unit</b> 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 18-30 and 35-47 is/are rejected.
- 7) ☒ Claim(s) 14-17, 31-34 and 48-51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02032005</u> . | 6) <input type="checkbox"/> Other: _____  |



---

**UNITED STATES PATENT AND TRADEMARK OFFICE**

---

P.O. Box 1450, Alexandria, Virginia 22313-1450 – [www.USPTO.GOV](http://www.USPTO.GOV)

### Examiner's Detailed Office Action

1. This Office Action is responsive to application 10/624,664, filed July 22, 2003.
2. Claims 1-51 have been examined.

### Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. The invention as disclosed in claims 1-13, 18-30 & 35-47 are rejected under 35 U.S.C. 101 as being non-statutory subject matter. The claimed invention as a whole must accomplish a practical application, that is, it must produce a "useful, concrete and tangible, result." With respect to applicant's invention, there is no practical application and is insufficient to establish a real world "tangible" result. Devoid of such it qualifies applicant's claimed invention as an abstract idea e.g., a computational model or a mathematical manipulation of a function or equation, or whatever, as such, a process that merely manipulates an abstract idea or performs a purely mathematical algorithm is non-statutory despite the fact that it might inherently have some usefulness.

5. In *Sarkar*, 588 F.2d at 1335, 200 USPQ at 139, the court explained why this approach must be followed:

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variables expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a "process" under 101. Consideration of whether the substitution of specific values is enough to convert the disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law.

6. Furthermore, for such subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm. *See Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). *See also Alappat* 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method or system, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. *See AT &T*, 172 F.3d at 1358, 50 USPQ2d at 1452. *See MPEP* § 2106(IV) Applicant is advised to make the appropriate corrections in an attempt to gain patentability. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02. Remember, the claims define the property rights provided by a patent, and thus require careful scrutiny. Therefore, it is not enough to set forth invention in the specification. The claims must also reflect the scope and breath of applicant's invention. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d

Art Unit: 2121

1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969).

### Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 18 & 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kalev Kask & Rina Dechter* ("*Kask et al.*") Stochastic Local Search for Bayesian Networks, 1999,  
in view of  
*Ahlstrom et al.* (USPN 6,301,613 B1).

Regarding claim 1. *Kask et al.* teaches a method for solving a constraint satisfaction problem (CSP) defined by a group of variables and constraints applicable to the variables, the method comprising the steps of:

(a) choosing a first state corresponding to a first set of values of the variables [*see* 3.1 Bucket and Mini-Bucket Elimination, step 3(b), Figure 2, *u(i)*];

Art Unit: 2121

- (b) selecting a hop distance within a state space of the variables responsively to a random distance selection criterion [see 3.1 Bucket and Mini-Bucket Elimination, step 3(b), Figure 2,  $u(i)$ ];
- (c) choosing a second state corresponding to a second set of the values of the variables, such that the second state is separated from the first state by the hop distance [see 3.1 Bucket and Mini-Bucket Elimination, step 3(b), Figure 2,  $v(i)$ ];
- (d) comparing a first cost, determined by applying the constraints to the first set of the values of the variables, to a second cost, determined by applying the constraints to the second set of the values of the variables [see 3.1 Bucket and Mini-Bucket Elimination, step 3(b), Figure 2,  $u(i)$ ];
- (e) if the second cost is closer than the first cost to meeting a condition indicative that the constraints are satisfied, redefining the first state to correspond to the second set of the values of the variables [see 3.4 A Greedy Algorithm Combined With Stochastic Simulation, Figure 4]; and
- (f) repeating steps (b) through (e) until the second cost meets the condition, whereby the second set of the values of the variables represents a solution of the CSP. [see 3.1 Bucket and Mini-Bucket Elimination, step 3(b), Figure 2,  $u(i)$ ]

*Kask et al.* does not teach an apparatus & computer-readable medium in which instructions are stored. However, *Ahlstrom et al.* teaches an apparatus & computer-readable medium in which instructions are stored. [see FIG. 3, C 9, L 48 to C 10, L 65] It would have been obvious at the time the invention was made to a persons having ordinary skill in the art to combine *Kask et al.* with *Ahlstrom et al.* because computer networks have become ubiquitous in the home, office, and industrial environment. As computer networks have grown ever complex, automated mechanisms for organizing and managing the networks have emerged. These mechanisms are

Art Unit: 2121

generally implemented in the form of one or more computer programs, and are generically known as network management systems or applications. [see C 1, L 14-21]

### Correspondence Information

9. Any inquires concerning this communication or earlier communications from the examiner should be directed to Michael B. Holmes, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-3686 or facsimile transmission (571) 273-3686 or email [Michael.holmesb@uspto.gov](mailto:Michael.holmesb@uspto.gov).

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, Anthony Knight, may be reached at (571) 272-3687.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

***Michael B. Holmes***

Patent Examiner

Artificial Intelligence

Art Unit 2121

United States Department of Commerce

Patent & Trademark Office

*Thursday, March 16, 2006*

*MBH*



**Anthony Knight**  
Supervisory Patent Examiner  
Group 3600